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UNITED STATES DEPARTMENT OF AGRICULTURE
Research Program Development and Evaluation Staff
Washington, D. C. 20250

REPORT AND RECOMMENDATIONS
of the
HUMAN NUTRITION AND CONSUMER USE RESEARCH ADVISORY COMMITTEE
Developed at its Fourth Meeting
December 5-8, 1966
Washington, D. C.

HUMAN NUTRITION AND CONSUMER USE RESEARCH ADVISORY COMMITTEE

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PREFACE

The objectives of nutrition and consumer-use research to (1) analyze consumer needs and problems, (2) determine utility and economy of goods and services, (3) measure levels of living, and (4) evaluate and interpret research findings and develop guidelines for maximum well-being, are designed to provide Federal, State, and industrial leaders with a sound basis for policies and programs and to assure maximum contribution of agriculture to the welfare of the consumer.

In preparation for this report the Committee reviewed progress reports and plans and needs for future research by the Agricultural Research Service Divisions that conduct human nutrition and consumer-use research (hereinafter referred to as NCU or NCU divisions). It also observed research in progress and the facilities for human nutrition research at the Beltsville Agricultural Research Center.

GENERAL RECOMMENDATIONS

The Committee is pleased to note that many of the recommendations made by this Committee in 1965 have been implemented or moved to new stages. Because a number of these recommendations had long-range implications, the 1966 Committee takes this opportunity to reaffirm them. This Committee also offers the following additional suggestions:

"A National Program of Research for Agriculture," Joint USDA-ASULGC^{1/} Report

In the report "A National Program of Research for Agriculture," Goal VII (protect consumer health and improve nutrition and well-being of the American people) and Goal VIII (assist the more than 50 million rural Americans to improve their levels of living) which specifically pertain to human nutrition and consumer-use research provide a highly desirable framework within which research programs of the HN and CFE divisions can be selected, planned, and developed. It is recommended that each ongoing and anticipated research program in human nutrition and consumer-use be evaluated carefully in terms of the specific goals to determine the most effective use of available funds in order to reach these goals. Furthermore, each project needs to be judged on the basis of whether it should be conducted by and within the facilities of the USDA or whether it would be more appropriately conducted by a State Experiment Station or some other qualified research organization. It is further suggested that the advisory committee be asked to work with the NCU personnel in developing guidelines for these judgments.

This Committee views the evaluation of the NCU program in terms of these goals as an opportunity for determining the new areas of emphasis in which NCU can give leadership comparable to that provided through such outstanding programs as the food consumption surveys, dietary appraisals, compilation of food composition tables, and measurement of levels of living.

Limited time to review the joint report, available at the beginning of the current advisory committee meeting, did not permit its complete examination. Nevertheless, the changes in the proportionate amounts of funds for goals VII and VIII are unrealistically low and inconsistent with the increasing public concern and responsibility of government for programs relating to nutrition, health, and levels of living. Considering the relative importance of this field, the Committee urges that a significant increase be planned in the proportionate funds.

The Committee supports the recommendation that legislation be enacted to establish an additional Assistant Secretary position in USDA for Science and Education.

1/ Association of State Universities and Land-Grant Colleges.

Need for a Central Research Facility

The Committee recommends that funds be made available for the planning and construction of a central facility to house all Human Nutrition and Consumer-Use Research Divisions. Such facilities are greatly needed if the goals for agricultural research are to be attained and the national responsibilities met as set forth in "A National Program of Research for Agriculture."

Need for Study of Graduated Annual Income Plan

It is recommended that the USDA initiate an interagency study to determine the effect on general welfare of substituting a national graduated guaranteed annual income for all of the present national, state, and local welfare programs. The USDA group should specifically consider the effect on rural well-being of substituting the guaranteed income plan for the current price and income support programs in agriculture, as well as the potential influence on the programs of the NCU divisions.

NUTRITION AND FOOD SCIENCE

General Comments

As in the general recommendation, Goals VII and VIII of the national program of research for agriculture are supported as ones highly desirable in providing the framework within which human nutrition and food science research should be expanded. It is further recommended that those persons in USDA in the field of human nutrition and food science should examine present and anticipated operational programs, with the counsel of others, to delineate the programs which fall within these goals. They should decide if the programs represent the most effective use of available funds, and if they clearly belong as operational programs of State Experiment Stations or other research groups qualified to do the research.

The NCU is commended for its present interdepartmental and interagency cooperation and is urged to expand such cooperation as recommended by the joint committee of the USDA and the association of State Universities and Land-Grant Colleges.

The present administrative organization appears to be adequate but there is a need to have salary scales and grades revised in order to attract and hold high caliber personnel in NCU. There is a critical need for establishing and insuring GS-15 positions for scientists to facilitate the organization and development of research in nutrition and food sciences.

Training of Scientists

It is recommended that USDA be given authority to obtain funds to initiate and sponsor graduate training and training programs at universities in nutrition and food sciences to meet the personnel shortage.

Nutritional Status and Requirements

The NCU Divisions should be commended for their cooperation and assistance given to the Office of Economic Opportunity for the Head Start programs and to the Children's Bureau for the preparation of guidelines to evaluate nutritional status of preschool children. Further effort in this field is needed.

Research in human nutrition demands increased emphasis and support. There is special need for more longitudinal studies in vulnerable age periods, such as preschool children and pregnant women, where guidelines for evaluation of nutritional status have been or are being developed by joint nutrition committees. Human nutrition studies to include investigations on imbalances due to excessive intake of nutrients should be initiated. A review should be made of existing studies available on the effects of exercise, environment and physical fitness on nutritional and physiological responses. There is an urgency to extend nutritional research on human subjects in order to evaluate and improve nutritional status of underdeveloped segments of the U. S. population and, also in view of the new responsibilities in foreign programs, it is recommended that the existing research facilities of universities, industry, and research institutions be utilized insofar as possible.

Research is needed on the nutritional requirements of adolescents. Due to the stress of rapid growth and the maturation processes, consideration should be given to those age and activity groups under physiological and psychological stress.

Basic research needs to be expanded on the significance of intake of fats from different food sources as affected by other dietary components to provide increased evaluation of the roles of hormone status, environmental stress, and physiological functions.

Nutritional and Other Consumer Values of Food

The Department is commended and encouraged to continue its emphasis on amounts of specific nutrients and nutritional value of foods. It is recommended that careful reviews be continued of the scientific literature and all other available sources to determine when there are gaps in needed information concerning nutrient content of foods. Results of such reviews should provide guidance and priorities for future studies to eliminate the gaps in analyses of nutrients.

The USDA has been a pioneer and is recognized as one of the authorities in the preparation of tables of food composition and man's dietary requirements. The Committee greatly commends the staff and recognizes the contributions made by the USDA Agricultural Research Service in the preparation of Handbook No. 8 and many other pamphlets and books on the composition and nutritive value of foods. The Committee recommends a continuous review of research findings in this area in order to keep the data in Handbook No. 8 current with new

varieties, and new production, processing, and marketing practices. These data are essential in determining the nutritional adequacy of diets of institutional groupings such as the educational levels in the school and college systems, institutions for the aged, and day-care centers.

In connection with the continuing collection of data on composition of foods for Handbook No. 8, we emphasize the need for correlating and giving possible priority to types of foods used in institutional feeding and institutes for the aged and day-care facilities as a necessity in assessing adequacy of diets.

The Committee recommends that there be a compilation of available data on the influence of commercial processing, storage and handling on the nutrient value of foods, and that research programs be developed to obtain additional information when it would have significant value in evaluating the nutritional contributions of the "newer" foods.

It is recommended that the increasing introduction of synthetic or substitute foods be recognized and, where needed, evaluations be made of their acceptability and nutritional contribution or their adverse effect. Helpful suggestions as to how such foods might be encouraged advantageously in either domestic or foreign feeding programs would be most appropriate at the time of their introduction.

Research is required to determine the effect of domestic and commercial preparation methods upon the nutrients in foods and to develop realistic figures for nutritive values of diets as served.

Research should be expanded on the specific chemical forms in which mineral elements occur in foods, and on the effects of processing treatment and preparation upon the mineral constituents of foods.

Research should be continued on the chemical, enzymatic, and microbiological changes during processing, storage and cooking of foods that result in losses in flavor, color, texture as well as nutritive value.

It is recommended that work be expanded in the field of nutritional fortification and supplementation to improve nutritional value. A review of the need for fortification of products for consumption in the United States is necessary.

The Committee also recommends that an evaluation be made of the acceptability, nutritional value and cost of Type A lunches served in the National School Lunch program.

FOOD CONSUMPTION AND DIET APPRAISAL

Nationwide Food Consumption Surveys

As noted in the 1964 and 1965 reports of this Committee, information collected through the food consumption surveys at 10-year intervals is not available from other sources and is essential to many government and nonprofit agencies, to education, and to the business community. The Committee strongly urges that all possible resources be utilized to make the findings of the 1965-66 survey available in the shortest possible time.

The Committee also urges that, insofar as possible, tests be made and reported of the extent of response bias on individual food items.

The Committee considers it essential that a permanent and continuing program of food consumption studies be established. The data collected through such studies are of such importance to so many programs and agencies that the surveys should be considered as a part of the vital U. S. statistics. Such a program should be established on an interdepartmental basis as has proven successful with the 1965-66 food consumption survey. In this connection, it is suggested that serious study be given to the possibility of establishing a continuous consumer purchase panel that is federally-sponsored and representative of the total U. S. and the four regions. The panel could be used as a basis of nutritional status studies and purchase pattern studies; it could provide basic consumer price data and could conceivably be extended to include complementary data such as improved estimates of unemployment. It is recognized that such a continuous reporting panel would be very expensive in total cost but it could provide a variety of data for several government departments which would make the project an economical part of a long-range program. It would provide a valuable type of time series and longitudinal data which are not otherwise available. Only the Federal government has the capacity for this type of program.

Diet Appraisal

The Committee commends the staff for the excellent studies initiated in diet appraisal this past year. Since accurate measures of nutritional status of various groups are important to a number of national policy decisions, it is proposed that special studies be initiated to evaluate loss of nutrient content due to such factors as preparation and plate waste and, whenever feasible, that data be collected, adjusted, and reported in a form which gives the estimate of nutrients ingested as well as of the nutrients available.

The Committee commends the staff for initiating the study of nutritional status of low- and medium-income children in Hawaii. It is recommended that additional studies of dietary status, food consumption patterns and related factors be made of other special populations and that in determining priorities, the following be considered:

- a. The urgent need for information on the families of migrant farm workers.
- b. The need for understanding of factors which will facilitate the movement of young people from poverty. Too little is known of the

nutritional status of children of the poor and the effect of nutrition and food practices upon motivation and family spending patterns.

- c. The need for better knowledge of the condition of the aged poor, especially those living alone.
- d. The need for a study relating food patterns and nutritional status to family life cycles.

Further studies in depth are essential to determine the health and economic benefits of the Food Stamp Program. Such studies should include the relationship and possible effects of a family's participation in the Food Stamp Program and the availability of money for children to participate in school lunch programs.

Data from the food consumption studies are currently being used in economic, social and health programs by a variety of agencies. We recommend that a study be undertaken to identify such uses (or possible misuses), and to study the appropriate uses of such data as a base for program eligibility criteria.

To create an effective system of collection for quantitative and qualitative nutritional data that is user-oriented, it is recommended that the male and female age groupings in the age bracket (9-22 years of age) be modified to coincide with the age groupings represented in our school and college systems. Additional quantitative adjustments will be eliminated and mechanized input operations will be simplified with a resultant reduction in input time and costs.

Nutrition Education Conferences

We continue to endorse and support the recommendations made by previous Committees that a Nutrition Education Conference be held every 5 years. We are pleased to note that the 1967 Nutrition Education Conference will emphasize the economic, sociological, and behavioral factors affecting food consumption and nutrition education.

FAMILY ECONOMICS

1960-61 Consumer Expenditure Survey Reports

Special recognition is given not only for completion of the descriptive reports of the rural part of the 1960-61 Survey of Expenditures, but also for the assistance in interpretation provided through such far-reaching avenues as the Family Economics Review and the Annual Outlook Conferences. Broader circulation of this interpretive information is encouraged. Toward this end, the plan to up-date Home Economics Research Report No. 21, Helping Families Manage Their Finances, is commended.

Measures of Levels of Living

Support for current plans. Plans for analytical studies using data from the 1960-61 consumer expenditure survey are strongly supported. Objective bases are needed for the development of budgetary costs in individual categories of expenditure other than food, as in the costs of raising a child, and for the broader questions of determining income and other resources needed to maintain levels of living of families of different composition or urbanization. Such information is needed to minimize variation and inquiries in criteria for income eligibility or guidelines for new or existing Federal or State programs.

The study on clothing acquisitions among low-income families, cooperative with the Iowa Agriculture and Home Economics Experiment Station, is affirmed for its preliminary contribution toward the testing of hypotheses basic to the development of clothing budgets. A broader study should be initiated later for national representation and use.

Work should proceed as planned toward the development of an index to measure the economic well-being of rural families to meet the current needs of agencies concerned with programs for low-income families. Studies of factors that enable individuals and families to rise out of poverty are equally critical in the related concern for the development of positive programs for improvement.

Research areas for expanded effort. Consideration of expansion of efforts in the area of economic measurement to include evaluation of the contribution of household services by family members is encouraged. Means for evaluating this contribution could give recognition to a sizeable aspect of family consumption and welfare, and also provide a basis for family decision-making as alternative opportunities increase for providing these services.

Anticipated research on the use of credit, particularly mortgage, and on replacement rates and costs of maintaining household equipment will contribute information on important areas of need. They also relate to the broad area of the economics of housing for which the research need is urgent. The Committee proposes expansion into this broader area as soon as possible. Determination of measures for adequate housing and clarification of interrelationships of consumption and investment aspects of housing are particularly important needs.

Although the migrant farm population is commonly identified with local concerns, their problems are rooted in situations of national economic and sociological significance. Studies should be made to determine if this group is receiving proper consideration. If not, this problem should receive attention.

CLOTHING AND TEXTILES

Research Facilities

The Committee is encouraged to learn that the research in clothing and textiles is to continue and that progress has been made in establishing a site at a land-grant institution. With a site established, the recruiting of personnel to help bring the research up to the 1964 level should be made less difficult.

Removal of Soil and Prevention of Deterioration in Textiles

The Committee is pleased to learn that the research on deterioration of cotton fabrics by hypochlorite bleach has progressed to a point that completion is possible during the 1968 fiscal year.

Stain Removal from Durable Press Fabrics

With the increased use of durable press fabrics, blended as well as all-cotton, the problem of removal of oil-borne stains becomes more urgent. Research on this problem is therefore considered important by the Committee and should be initiated.

Pesticide and Virus Contaminated Clothing

Because the increased use of pesticides may result in more users having their clothes contaminated with these chemical products, the Committee recommends that a pilot study be made to determine the seriousness of the problem. The Committee commends the research on the survival and retention of infectivity of viruses and bacteria on fabrics in home-type laundering and recommends that this research proceed as rapidly as possible.* The Committee also recommends the initiation of research on the survival of viruses in home-type laundering and during drycleaning, and on the effectiveness of antiviral agents in the laundering solution.

Anthropometric Measurements

The Committee recommends that research on instrumentation and procedures for making anthropometric measurements on children's feet, which is to be terminated in fiscal year 1967, be followed by a research study of actual measurements on children's feet.

The small-scale study now underway to determine whether body proportions of women have changed significantly since 1939-1940 is enthusiastically endorsed by the Committee. Plans underway for taking body measurements of elderly women should result in useful and valuable information.

Clothing Needs of Handicapped Children

The Committee recommends that the study to determine the clothing needs of physically handicapped children be resumed and expanded to include needs of mentally handicapped children.

Test Methods that Predict End-Use Performance of Textile Products

There is a growing need for new test methods for textiles that can predict actual end-use performance. As new textile products with special performance characteristics are created, suitable test methods must be developed so that the consumer can be given assurance that these new products perform satisfactorily. The Committee believes that a portion of the effort of those concerned with clothing and textile research should be devoted to helping develop meaningful methods of testing performance.

